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Calvert County Flood Mitigation Plan: Annual Progress Report March 19, 2020

Under the Federal Emergency Management Agency's (FEMA) Community Rating System (CRS) Program, an annual report providing implementation status for the Calvert County Flood Mitigation Plan must be presented to the Calvert County Board of County Commissioners (BOCC). The status report must also be distributed to the media and be made available to the public. The Annual Progress Report will be advertised in a press release and made available to the public on Calvert County's website.

Background

Calvert County's "Flood Mitigation Plan for Calvert County, Maryland" was prepared by the Hazard Mitigation Steering Committee, consisting of representatives from Calvert County government, the Towns of Chesapeake and North Beach, residents, and consultants. The Hazard Mitigation Steering Committee held four steering committee meetings between November 2008 and June 2009, and two public forums in April and June of 2009. The Plan was prepared between June 2009 and June 2011. Public hearings were held on July 20, 2011, before the Calvert County Planning Commission and July 26, 2011, before the BOCC. The BOCC adopted the Plan on August 24, 2011 (Resolution 2011-28-11).

There have been no major updates in the status of action items from the previous Annual Progress Report; however, there is new activity to report. Pursuant to Maryland House Bill 1427 (2019), §3-1018(b) and (c), the county must submit to the Maryland Department of Planning a plan to address nuisance flooding by October 1, 2020 and must post the plan on the county's website. The definition of nuisance flooding in accordance with §3-1001 of the *Natural Resource Article* of the Maryland Annotated Code is "high tide flooding that causes a public inconvenience". The state recommends that each plan include three critical components: an inventory of known flood hazard areas where tidal nuisance flooding occurs; identification of flood thresholds/water levels/conditions that lead to tidal nuisance flooding; and a mechanism to document tidal nuisance flood events and response activities. The Department of Planning & Zoning is working with other departments to prepare the Nuisance Flooding Plan. The department is updating the countywide flood mitigation plan as well as working towards adopting flood mitigation plans for Breezy Point/Neeld Estate and Solomons.

Contents of the Calvert County Flood Mitigation Plan

- Calvert County's Flood Mitigation Plan includes:
 - The county's flooding history
 - A description of flooding issues impacting the county
 - A flood vulnerability assessment
 - Preventive measures (i.e., regulatory requirements, educational outreach, building codes, watershed management plans, the National Floodplain Insurance Program [FIRM])

- Property protection plans (i.e., relocation, elevation, flood insurance)
- Emergency services plans (i.e., emergency recognition, warning, response, critical facilities protection, recovery)
- Structural projects inventory (i.e., dams, bridges)
- Natural resource protection (i.e., wetland protection and forestland conservation, soils and erosion control)
- Public outreach efforts (i.e., interactive GIS floodplain map)

Calvert County Flood Mitigation Goals

The Plan includes seven goals, supported by 22 actions and 10 sub-actions. The seven goals are:

- 1) Direct population concentrations away from known or predicted high flood hazard areas through appropriate regulations.
- 2) Ensure new construction and reconstruction are resistant to flood damage.
- 3) Existing natural resources and open-space within the floodplain and watershed should be protected.
- 4) Ensure continued coordination during emergencies.
- 5) Ensure critical facilities are less vulnerable to flooding.
- 6) Reduce potential disruption of the county's infrastructure during hazard events.
- 7) Protect existing natural resources and open-space within the floodplain and watersheds.

Calvert County Flood Mitigation Action Items & Status of Action Items

Action 1: Based on sea level rise and wave action, adopt a 2-foot minimum freeboard (currently 1 foot) above the base flood elevation for the County and municipalities.

In 2011, Calvert County amended its floodplain ordinance language, modeled after the FEMA's model ordinance, which includes a two-foot freeboard requirement. Amended 11-10-2011 by Ordinance No. 43-14; Zoning Ordinance reference § 8-2.03.J.3.a (Elevation Requirements).

Action 2: Review zoning density and restrict zoning to low density in the 100-year floodplain (conservation, agricultural or large lot residential use) outside of Town Centers.

This action will be considered as part of the county's Zoning Ordinance update which is ongoing.

Action 3: Emphasize the criticality in rejoining the CRS Program. Hire a consultant to complete the CRS application and develop a template for future use.

In May 2015, FEMA approved Calvert County's participation in the CRS Program with a rating of eight, representing a 10 percent reduction in flood insurance premiums for property owners owning structures in the Special Flood Hazard Areas.

Action 4a: Riverine FIRMs have been completed and coastal FIRMs are underway. Incorporate coastal information once available and dFIRM (riverine) information into future flood mitigation planning efforts.

The FIRMs were officially approved and adopted on November 19, 2014. The new FIRM information has been integrated into Calvert County's small area flood mitigation planning effort. Under the National Oceanic and Atmospheric Administration's (NOAA) Coastal Communities Initiative Grant (administered by Maryland's Department of Natural Resources), P&Z has completed, is in the process of completing, and/or is planning on preparing several small area flood mitigation plans for some of the county's most flood-prone communities. The Cove Point Community Flood Mitigation Plan was adopted in 2014. Cove Point is the county's most flood-prone community. The Broomes Island Flood Mitigation Plan was adopted in 2016. Broomes Island is the county's second most flood-prone community. The Breezy Point/Neeld Estate and Solomons Flood Mitigation Plans are currently proceeding through the approval and adoption process and will be presented to the Planning

Commission and go through public hearing and adoption in 2019. Breezy Point/Neeld Estate is the county's fifth most flood-prone area. The county has drafted flood mitigation plans for both the Town of Chesapeake Beach and the Town of North Beach. These plans are now with the municipalities for adoption. The towns are responsible for the plans adoption, at their discretion. The towns are the third and fourth most flood-prone communities in the county.

Action 4b: Continue to require that recorded subdivision plats show the 100-year floodplain.
This action is on-going.

Action 5: Consider elevation or acquisition of the identified repetitive loss properties in specific areas – all of Cove Point, and Means Drive and Bayside Drive in Chesapeake Beach.

The county actively pursues the FEMA / MEMA Hazard Mitigation Grant for the elevation or acquisition and demolition of existing properties within the floodplain / designated special hazard areas. The projects from the 2015/2016 application cycle are complete. An application for the 2017 Hazard Mitigation Grant was completed in September of 2017 and contained a total of seven properties. Of these, three were acquisitions/demolitions and the remaining four were elevations. These projects were turned over to the Calvert County Department of Public Safety, Emergency Management Division (DPS EMD) and all future applications and projects will be overseen by Emergency Management.

Action 6: Consider having the threshold for cumulative substantial improvements from 50 percent to 40 percent so that more buildings meet the flood protection standards.

This action will be considered as part of the county's current Zoning Ordinance update, which is in progress.

Action 7: Identify uninsured property owners in known flood hazard areas and encourage them to purchase flood insurance.

P&Z conducts this action on a case-by-case basis and informs residents owning property in the floodplain that flood insurance is mandatory. This is accomplished through permit review; public outreach efforts involved with preparing the small area flood mitigation plans for Cove Point, Broomes Island, Breezy Point, Neeld Estate, and the Towns of Chesapeake and North Beach; public outreach through the CRS Program including notifying property owners in repetitive loss areas; and through public outreach informing residents of flood hazards and sea level rise scenarios.

Action 8: Identify more state of the art capabilities to provide emergency services to the public.

Calvert County's DPS EMD has upgraded its mass notification system to send targeted messages to high risk groups. Additionally, NOAA has started to conduct river gauge projections, which allows DPS EMD to see predicted flood level estimates. This allows DPS EMD to notify residents who may be affected by flooding prior to the potential flood event.

Action 9: Prepare a power-backup plan for the county's critical facilities. Incorporate SMECO's Reliability Project to improve power service to the county.

DPS EMD has upgraded its emergency generator systems for the courthouse and all critical facilities. In addition, the Southern Maryland Electric Cooperative (SMECO) Reliability Project, which upgraded a 230-kV power line feeding into Calvert County, was completed in November 2014. The SMECO Reliability Project isolates problems on the transmission system and re-routes power to minimize large-scale, time-consuming service disruptions. The upgrade provides more reliable power service to Calvert County, including its critical and county facilities.

Action 10: Continue to develop routine procedures that require examination of the potential for flood damage to road, culvert, water line, or sewer line as well as regular maintenance.

This action is on-going.

Action 11: Conduct a flood audit to identify ways to protect critical facilities in or near the 100-year floodplain: Industrial Park Wastewater Treatment Plant on Skipjack Road; Chesapeake Beach Wastewater Treatment Plant; North Beach Water Treatment Plant; North Beach Volunteer Fire Company; Our Lady Star of the Sea School; and Hallowing Point Station and Solomon's Police Station. The flood audit should include a review of the flood hazard at site, low entry points, warning times, etc. as well as specific mitigation options to prevent future damage.

The Industrial Park Waste Water Treatment Plant (WWTP) has been closed, and all sewage from the Industrial Park is pumped to the Prince Frederick WWTP. According to the Calvert County Flood Mitigation Plan, the county does not have any critical facilities in the 100-year floodplain (p. 23). Rather, the above referenced facilities are within 100 meters of the 100-year floodplain.

The State of Maryland owns the Hallowing Point Station Building, and it has begun a planning study to relocate the building out of the floodplain.

The Chesapeake Beach Waste Water Treatment Plant (WWTP) is located outside of the floodplain; however, the WWTP is impacted by inflow and infiltration (I&I) and due, in part, to its proximity to the 100-year floodplain. The Town of Chesapeake has installed measures to address I&I. For example, "cups" were placed on some of the manholes subject to flooding; pumps and tanks were installed at 31st Street and C Street to pump rain and nuisance flood waters to the row boat marina; a shellfish protection tank was installed to store a day's worth of flow for the plant and store rain; the revetment was raised at the end of Bayside Road (MD 261) and 28th Street. I&I has been addressed within the WWTP service area serving the Town of Chesapeake Beach, and a Scadia System was installed to gauge if there is I&I coming from the portion of the WWTP service area serving Anne Arundel County. A flood gate was installed in 1987/1988. However, the Critical Area Commission required that the flood gate remain open to allow the natural flow of water. The flood gate has been open ever since and is now suspected to be rusted open.

The North Beach Volunteer Fire Department is subject to nuisance flooding from rainwater flowing from adjacent uplands in the Town of Chesapeake Beach and Calvert County. P&Z met with the Town of Chesapeake Beach in May 2016 to identify flooding/nuisance flooding issues.

A flood audit still needs to be conducted for Our Lady Star of the Sea School and the Sheriff's Office Substation in Solomons.

Action 12a: Elevate the entrance into the Cove Point neighborhood to allow easier access during emergency situations.

If elevating the entrance to Cove Point (Lighthouse Boulevard) were done, managing the stormwater runoff would be a challenge. A drainage ditch adjacent to the roadway would not be an adequate stormwater management measure. The combination of sandy soils and a high water table will contribute to a drainage ditch's eventual and inevitable failure. Several years ago the county installed a drainage ditch along the south side of Lighthouse Boulevard that was three feet wide and three feet deep, accompanied by an 18-inch pipe for water storage. The drain worked for two to three years, but due to the fact that Cove Point is a sand spit, located in the floodplain and next to a tidal marsh, the drain failed/filled. The drainage ditch adjacent to the Cove Point Marsh has also failed due to the same reasons. Culverts under the road are also not an option because they are likely to become clogged and become a maintenance issue or fail. Additionally, clogged culverts could worsen flooding. Therefore, elevating the road may alleviate flooding at the community's entrance, but it will likely cause drainage and flooding issues in other areas of the neighborhood, potentially exacerbating existing flooding (details on page 16 of the Cove Point Community Flood Mitigation Plan).

Action 12b: Investigate the possibility and feasibility of constructing a culvert with riser from the southwest corner of Cove Point freshwater marsh to the Chesapeake Bay along Park Drive to mitigate flooding of Cove Point from fresh water sources.

See answer to Action 12a.

Action 13: Continue to implement stormwater best management practices (BMPs) during construction or as part of a project's design to permanently address nonpoint source pollutants. In addition to improving water quality, BMPs can have flood related benefits. By managing runoff, they can attenuate flows and reduce the peaks after a storm.

This action is on-going.

Action 14 a: Prepare a presentation to demonstrate future adverse impacts caused by development not accounted for, and the benefits of planning, improved mapping and regulatory standards.

This action needs to be completed.

Action 14b: Include information on hazards in the county's and municipalities' newsletters (Calvert Currents) as the well as county's website.

This action is ongoing.

Action 14c: Conduct environmental and safety education programs to teach children about flooding, forces of nature, significance of protecting watersheds and floodplains and educate the floodplain property owners and elected officials.

This action needs to be completed.

Action 15: Continue to promote the use of NOAA radios as a source of immediate information by disseminating information at public meetings, community and senior centers, and citizen associations.

This action is on-going.

Action 16: Conduct training sessions on the use of dFIRMS to stakeholder groups including planners, engineers, realtors, and community leaders.

This action is ongoing via workshops held by MEMA and FEMA and advertised in the county newsletter.

Action 17a: Make dFIRMS available for download on the county website.

This action needs to be completed.

Action 17b: Develop a map website that allows users to determine their FIRM zone and other property information. Also consider adding links to gauges to provide real-time water levels and National Weather Service flood crest predictions. Include additional data with aerial photographs and information on additional hazards, flooding outside mapped areas, and zoning and development regulations.

The county has developed a floodplain map for the public which provides the following information: (1) flood zone; (2) base flood elevation; and (3) Limit of Moderate Wave Action (LiMWA). The map may be found at http://calvertgis.co.cal.md.us/Html5_272/Index.html?configBase=http://ccg-gisweb02.calvert.ccg.local/Geocortex/Essentials/GC_PROD/REST/sites/Flood_Hazard_Map/viewers/HTML/virtualdirectory/Resources/Config/Default.

Action 18: Include public awareness and outreach activities related to floodplain management as part of the Patuxent River Day activities.

This action is ongoing through the public outreach activities of the Calvert County Environmental Commission.

Action 19a: For a property in North Beach, consider the following actions: a) install water equalizing vents to allow flooding without damage; and c) elevate all utilities above the Base Flood Elevation.

This action is ongoing. Flood proofing is to be completed by the property owner in accordance with the floodplain management regulations of the Town of North Beach.

Action 19b: For properties on Mears Drive in Chesapeake Beach, consider the following actions: a) install water equalizing vents to allow flooding without damage; and b) elevate all utilities to upper floor level.

This action is ongoing. Flood proofing is to be completed by the property owner in accordance with the floodplain management regulations of the Town of Chesapeake Beach.

Action 19c: Consider acquisition and demolition of properties on Bayside Road in Chesapeake Beach. As a short-term option, install flood shields at all door openings and elevate all utilities above the Base Flood Elevation.

This action is ongoing. See answer to Action 5. Flood proofing is to be completed by the property owner in accordance with the floodplain management regulations of the Town of Chesapeake Beach.

Action 20: Investigate the feasibility of constructing a flood wall in the Towns of Chesapeake Beach and North Beach that would protect the residential and commercial properties in the two towns.

This action is on-going.

Action 21a: Work with the Flood Hazard Mitigation Steering Committee and members of the public who are interested in flood-related issues to implement this plan and review its progress.

This action needs to be completed.

Action 21b: Meet every six months to review projects that have been completed, altered, or are no longer applicable.

This action needs to be completed.

Action 21c: Update the Flood Mitigation Plan every five years and after a flood event.

This action is ongoing.

Action 21d: Integrate this Plan into the All-Hazard Mitigation Plan as an annex.

The Calvert County, Maryland 2010 Hazard Mitigation Plan Update was approved by the BOCC on July 26, 2012. The plan includes the Flood Mitigation Plan as Appendix A.

Action 22) Investigate flooding of Western Shores Blvd. with Western Shores Citizen Association.

This action needs to be completed.

Summary of Status of the Actions and Recommendations

Of the 32 actions and sub-actions, 24 either have been on-going or completed, and eight need to be considered or completed.

1. When the Division of Emergency Management applies for another round of FEMA Hazard Mitigation Grant monies, reach out to property owners on Mears Drive and Bayside Road in Chesapeake Beach (addresses action item 5).
2. When the Calvert County Comprehensive Plan and Zoning Ordinance are updated, review zoning density and suggest restricting zoning to low density in the 100-year floodplain (conservation,

agricultural or large lot residential use) outside of Town Centers, and consider designating a zoning district for the 100-year floodplain, similar to the county's current wetlands zoning district (addresses action item 2).

3. When the Calvert County Comprehensive Plan and Zoning Ordinance are updated, consider lowering the threshold for cumulative substantial improvements from 50 percent to 40 percent so that more buildings meet the flood protection standards (addresses action item 6).
4. Initiate and/or complete actions/sub-actions 11, 14a, 14c, 17a, 21a, 21b, and 22 when resources become available.